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**From:** Michael Ritorto [mritorto@rouxinc.com]  
**Sent:** 5/6/2016 2:02:18 AM  
**To:** Cirian, Mike [Cirian.Mike@epa.gov]  
**CC:** John.Stroiazza@glencore-ca.com; Steve Wright - CFAC [swright@cfaluminum.com]; Andrew Baris [abaris@rouxinc.com]; cowen@mt.gov; lidewitt@mt.gov; repinedl@cdmsmith.com; Hoogerheide, Roger [Hoogerheide.Roger@epa.gov]  
**Subject:** RE: CFAC Phase I Site Characterization - Soil Gas Screening Scope of Work Proposed Modifications  
**Attachments:** removed.txt; RE: UST Area Vapor Screening Scope of Work at the CFAC Site

Hello Mike,

I apologize if there was some confusion with the previous correspondences. I hope this email will clarify.

There were two different scopes of work related to the soil gas investigation: 1) The passive AGI samples and 2) Screening of soil gas in the landfills utilizing the soil gas probe, landfill gas meter, and PID.

The passive AGI samples were proposed in three areas: the former drum storage area, the former fueling area (i.e., the area with the USTs), and two locations in the operational grid area just south of the wet scrubber sludge pond. The AGI samples were deployed, retrieved, and sent to AGI for analysis from the locations in the former drum storage area and the operational grid area. We are currently waiting for those results from AGI. The passive samples in the former fueling area were not completed. We sent you correspondence discussing our rationale for not completing the samples in the fueling area and you concurred with our approach moving forward to add soil borings. I have attached that correspondence for your reference.

The soil gas screening was proposed in multiple landfills. My email below discussed the locations that were completed and provided a summary of the data collected from those locations. My email also discussed the locations that could not be completed due to subsurface interferences. We are requesting to forego those remaining samples that could not be completed.

In regards to your second comment, we agree with your proposed language change : "If the groundwater samples from these wells, or if any other sample results or new information involving the landfills, drum storage or vehicle fueling areas, indicate the presence of VOCs, the need for further soil gas sampling will be re-evaluated"

Please let us know if you concur with this correspondence and our response to your questions. If you concur, we will also document this correspondence in the SAP addendum, to be submitted later this month.

Thank you.

**Michael Ritorto**  
**Senior Hydrogeologist | ROUX ASSOCIATES, INC.**  
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**From:** Cirian, Mike [mailto:Cirian.Mike@epa.gov]  
**Sent:** Thursday, May 05, 2016 10:57 AM  
**To:** Michael Ritorto <mritorto@rouxinc.com>  
**Cc:** John.Stroiazzo@glencore-ca.com; Steve Wright - CFAC <swright@cfaluminum.com>; Andrew Baris <abaris@rouxinc.com>; cowen@mt.gov; lidewitt@mt.gov; repinedl@cdmsmith.com; Hoogerheide, Roger <Hoogerheide.Roger@epa.gov>  
**Subject:** RE: CFAC Phase I Site Characterization - Soil Gas Screening Scope of Work Proposed Modifications

Hello Michael,

Please see comments provided for your suggested Soil gas screening modifications:

- There was no mention of the passive soil gas sampling that was to be conducted in the former drum storage and vehicle fueling areas. We assume this is included in what will be "re-evaluated" at a later date, but given the historic use of those areas that should be specifically mentioned in their re-evaluation proposal and discussed in the Phase I Site Characterization Summary Report. If those areas will still be investigated, it would be helpful if he mention that in the proposal.
- Based on the response to that question, please add the following revision to Roux's emailed proposal (2<sup>nd</sup> paragraph, below table, last sentence): "The locations of the existing and proposed monitoring wells adjacent to and downgradient from the landfills are shown in attached map. If the groundwater samples from these wells, or if any other sample results or new information involving the landfills, drum storage or vehicle fueling areas, indicate the presence of VOCs, the need for further sampling within the landfills for VOCs soil gas sampling will be re-evaluated..."

Mike Cirian, PE  
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US EPA  
108 East 9th Street  
Libby, MT 59923  
(406) 293-6194 Office

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**From:** Michael Ritorto [mailto:mritorto@rouxinc.com]  
**Sent:** Monday, May 02, 2016 7:13 AM  
**To:** Cirian, Mike <Cirian.Mike@epa.gov>  
**Cc:** John.Stroiazzo@glencore-ca.com; Steve Wright - CFAC <swright@cfaluminum.com>; Andrew Baris <abaris@rouxinc.com>; cowen@mt.gov; lidewitt@mt.gov; repinedl@cdmsmith.com  
**Subject:** CFAC Phase I Site Characterization - Soil Gas Screening Scope of Work Proposed Modifications

Mr. Cirian,

This email is to follow-up on the project update conference call discussion (April 27, 2016) regarding the soil gas screening scope of work being conducted at the CFAC Site. As part of the work proposed in the CFAC RI/FS Work Plan and Phase I SAP (dated November 23, 2015), Roux Associates proposed to manually install a temporary soil gas probe at various locations within the different landfills at the Site; and at each location, to screen soil gas for the presence of methane using a landfill gas meter and for VOCs using a photo-ionization detector (VOCs). As of April 29, 2016, Roux Associates field personnel have completed screening utilizing the soil gas probe method at four locations within the Wet Scrubber Sludge Pond and two locations within the Center Landfill. Roux Associates personnel also screened ten existing landfill vents present in the West Landfill. A map of the locations completed is attached to this email for reference.

Results of the screening activities completed are provided below:

Screening Location ID	Methane (%LEL)	VOCs (ppm)	Location
CFSGS-010	ND	ND	Wet Scrubber Sludge Pond
CFSGS-011	ND	ND	Wet Scrubber Sludge Pond
CFSGS-012	ND	ND	Wet Scrubber Sludge Pond
CFSGS-013	ND	ND	Wet Scrubber Sludge Pond
CFSGS-034	ND	ND	West Landfill Vent
CFSGS-035	ND	ND	West Landfill Vent
CFSGS-036	ND	ND	West Landfill Vent
CFSGS-037	ND	ND	West Landfill Vent
CFSGS-038	ND	ND	West Landfill Vent
CFSGS-039	ND	ND	West Landfill Vent
CFSGS-040	ND	ND	West Landfill Vent
CFSGS-041	0.1	ND	West Landfill Vent
CFSGS-042	ND	ND	West Landfill Vent
CFSGS-043	ND	ND	West Landfill Vent
CFSGS-014	ND	4.9	Center Landfill
CFSGS-015	ND	0.7	Center Landfill

Roux Associates personnel were unable to manually install the soil gas probe at locations proposed in the Industrial and Sanitary landfills due to refusal at approximately 1 to 2 feet below land surface. Observations by the field personnel suggest that the soils in this interval consist of compacted coarse gravel, cobbles or boulders which consistently prevent the soil gas probe from being advanced any deeper. Roux Associates personnel subsequently attempted to utilize a commercially available mechanical auger drill to attempt to bypass the refusal depth. However, refusal was still encountered between 1-2 feet below land surface at both the industrial and sanitary landfills.

Because of the difficulties encountered utilizing the manual and mechanical methods, Roux Associates is proposing to discontinue the soil gas screening effort at this time. As summarized in the above table, the soil gas screening results obtained thus far indicate landfills are not significant sources of methane or VOCs. Although soil gas samples could not be collected from the sanitary or industrial landfills, sampling for VOCs in soil and groundwater is proposed in the areas around all of the landfills as part of the Phase I Site Characterization. The locations of the existing and proposed monitoring wells adjacent to and downgradient from the landfills are shown in attached map. If the groundwater samples from these wells indicate the presence of VOCs, the need for further sampling within the landfills for VOCs will be re-evaluated, with the results of this re-evaluation to be documented in the Phase 1 Site Characterization Summary Report.

Roux Associates is requesting that you provide your concurrence with the approach outlined in this email. If you concur, the changes outlined in this email would also be documented in the SAP Addendum, which is currently being prepared by Roux Associates and will be submitted in May 2016.

If you have any questions, please feel free to give me a call at the number below. Thanks.

**Michael Ritorto**

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